



Available online at www.sciencedirect.com

ScienceDirect

Procedia Computer Science 109C (2017) 763–770

Procedia
Computer Science

www.elsevier.com/locate/procedia

The 7th International Conference on Sustainable Energy Information Technology
(SEIT 2017)

Holism, collective intelligence, climate change and sustainable cities

Monika ML dos Santos^{a,b*}

^a*Department of Psychology: University of South Africa, PO Box 392, Pretoria 0004, South Africa*

^b*Department for Continuing Education: University of Oxford, Rewley House, 1 Wellington Square, Oxford, Oxfordshire OX12JA, United Kingdom*

Abstract

According to the Stern Review (2007) there is a 50% risk of global temperatures rising by more than 5°C by the year 2100. As the Earth's systems are under increasing unsustainable pressures, human security is clearly at stake. Cities are regarded to be increasingly important sites for climate responses, and something can still be solved if humankind acts quickly. It is proposed that city adaptation and mitigation strategies should draw on collective intelligence and an innovative holism multi-systemic approach to the encompassing problem of climate change by breaking it up into smaller, manageable problems and crowdsourcing a way out by means of online argumentation systems, computer simulations, and collective decision making tools. As 'first responders', cities with similar location or vulnerability characteristics should also be encouraged to transfer best practices between each other. Furthermore, this theoretical exposition argues that whilst adaptation and mitigation strategies are crucial, at the very crux of it, humankind needs a fundamental change of metaphors: from seeing the world as a machine to understanding it as a holistic network.

1877-0509 © 2017 The Authors. Published by Elsevier B.V.
Peer-review under responsibility of the Conference Program Chairs.

Keywords: Climate change; cities; holism; adaptation; mitigation; collective intelligence; crowdsourcing

* Corresponding author. Tel.: +27-12-429-8577
E-mail address: dsantmml@unisa.ac.za

1. Introduction

We are conceivably the first species on Earth that has ever been aware that it could render itself extinct by its own actions.¹ The Earth's land surface and climate have been altered fundamentally from the state they were in a few centuries ago. Scientists now know with significant confidence that these accelerated changes are attributable primarily to human activity, although there is still an incomplete physical understanding of many components of the climate system and their role in climate change.² Indeed, the 'Anthropocene' is increasingly regarded as a new geological era in Earth's history, one in which people take centre stage as the defining geological force.³ Christopher Lasch's publication of *The Culture of Narcissism* represents a significant point for consideration of possible links between a society dominated by narcissistic discourses, and the apparent increasing appearance of narcissistically related issues in human behaviour, and consequent impact on the environment.⁴ Subsequently, it is plausible that this massive aggregation of threats to ecological systems arises out of errors in our habits of thought at deep and partially unconscious levels, which have consequently resulted in widespread damage on the planet.

According to the Stern Review, commissioned by the British government in 2007, there is a 50% risk of global temperatures rising by more than 5°C by the year 2100.⁵ Given that Earth's systems are under rapidly growing and unsustainable pressures, and that human systems are inextricably linked to their fate, human security is clearly at stake. If societies are to maintain or establish such security, and successfully pursue together the larger quest for global sustainability - significant social, political, technological, ecological and economic transformation is required.⁶ Cities are regarded to be increasingly important sites for climate responses, and it is proposed that the use of internet technologies, crowdsourcing platforms and collective intelligence can extensively facilitate such responses.⁷ Ultimately, choices made today about the types, features and location of long-lived infrastructure, for example, will determine the extent and impact of climate change, and the vulnerability or resilience of cities and communities in it.⁸

2. Commodity fetishism and the chaos point

Industrialism and global capitalism, in its inherent need for new markets, has infiltrated even the most isolated cultures and traditions, resulting in the massive 'normalisation', or the subjective internalisation, of narcissistic values.^{4,9} Our most basic needs have been distorted and colonised, becoming associated with various commodities, as means to create new desires and profits. These ideals have been abstracted from a social context that makes them attainable for most people, in other words, they have been depersonalised.¹⁰ We see the mass 'addiction' of society in what Carl Marx aptly identified as 'commodity fetishism.'¹¹ The relentless greed for profit and the psychological manipulation of human needs means convincing us that commodities and novelty is elevated above ecological preservation.

Extending on these ideas, Ervin Lazio argues in *The Chaos Point* that we are at a critical juncture in history, and have a limited window to address the dangers we face.¹² During this window of opportunity, or the chaos point as it is referred to, Lazio writes that we either evolve to create a more sustainable world - or the social, economic, technological and ecological system we have now will break down.¹² Whilst the author acknowledges the seriousness of the situation, there is a positive message that something can be done if we act quickly. Drawing on complexity and chaos theory, he points out that humanity, like nature, is a dynamic system that is capable of 'abrupt change': that is, of ultra-rapid transformation. When such a system nears the point where the existing structures and feedbacks can no longer maintain the system's integrity, it becomes super-sensitive and responds even to a small impetus for change. Hence, 'butterfly effects' become possible, where the thinking, values, ethics and consciousness of a critical mass in society can cause rapid and fundamental change.

3. Holism and collective intelligence – a proposed intervention

No single discipline or scientific domain can understand, let alone address, the complex challenges involved in climate change and sustainability. The call for more integrated and innovative science is dictated by the complexity of the environmental and sustainability challenges that a city or society faces due to climate change. Despite the progress made by many academic groups and scientific institutions across the world, the task of bringing different

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات